diameter of the spiral is greater than 0.7 times the inner diameter of the tubular envelope.

2.(original) The heating element of claim 1 wherein the temperature coefficient α is greater than 3000 ppm/°C.

3.(original) The heating element of claim 1 wherein said wire has a nickel content greater than 40%.

4.(original) An electric appliance for heating or cooking foods, said appliance comprising:

at least one hotplate for the foods; and

a heating element coupled to said hotplate for heating said hotplate, wherein said heating element comprises:

a tubular metal envelope; and

a resistance wire encased in an insulator disposed at the interior of said tubular envelope, said wire being composed of nickel and iron as the two principal elements, and said wire having a temperature coefficient α greater than 1500 ppm/°C.

5.(original) The electric appliance of claim 4, wherein the temperature coefficient α is greater than 3000 ppm/°C.

6.(original) The electric appliance of claim 4, wherein said wire is wound in a spiral and the outer diameter of the spiral is greater than 0.7 times the inner diameter of the tubular envelope.

7.(original) The electric appliance of claim 6, wherein said wire has a nickel content greater than 40%.

8.(original) The electric appliance of claim 7, wherein said wire has a resistance selected so that the heat generated by electric power supplied to said heating element provokes an increase in the resistance of said wire up to an equilibrium value corresponding to a temperature of the hotplate that is the operating temperature of the hotplate to heat or cook foods.

9.(original) The electric appliance of claim 4, wherein said wire has a resistance that is created by giving said wire at least one of a selected length and a selected diameter.

10.(original) The electric appliance of claim of claim 4, wherein the power converted to heat by said heating element at the temperature required by said hotplate for heating or cooking foods is between 0.4 and 0.7 times the power converted

to heat by the heating element at ambient temperature for a given supply voltage to the heating element, the power difference being uniquely determined by the resistance and the temperature coefficient of said wire.

11.(original) The electric appliance of claim 4, further comprising means for aiding thermal exchange between said heating element and said hotplate.

12.(original) The electric appliance of claim 11, wherein said means for aiding thermal exchange comprise a groove in said hotplate, said groove housing said heating element.

13.(original) The electric appliance of claim 12, wherein said groove surrounds said heating element around at least one-half of the perimeter of said tubular envelope of said heating element.

14.(original) The electric appliance of claim 12, wherein said heating element is compressed in said groove in order to increase the surface area of contact between said heating element and said groove.

15.(original) The electric appliance of claim 12, wherein parts of said heating element in contact with said hotplate have a surface emissivity greater than parts of said heating element that are not in contact with said hotplate.

16.(currently amended) The electric appliance of claim 12, further comprising a diffusion plate covering parts of said heating element that are not in contact with said hotplate, said diffusion plate being made of a material that is a good thermal conductor.

17.(original) The electric appliance of claim 16, wherein the material of said diffusion plate is aluminum or copper.

18.(original) The electric appliance of claim 16, wherein said diffusion plate is also in contact with said hotplate and extends over a significant part of the surface area of said hotplate.

19.(original) The electric appliance of claim 12, wherein said resistance wire is positioned eccentrically at the interior of said tubular envelope.

20.(currently amended) The electric appliance of claim 11, wherein ~~the~~said means for aiding thermal exchange between said heating element and said hotplate allows said heating element to respond quickly to any variation in temperature of the hotplate, leading automatically to a modification of the power that is dissipate by said heating element.